

# **The Role of Education and Public Outreach (E/PO) in the Medium-class Explorer Program (MIDEX)**

**Presented at the MIDEX Kickoff Meeting  
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# OSS Education and Outreach

## What Are We Trying To Do?

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- Share the excitement of space science discoveries with the public
- Enhance the quality of science, mathematics and technology education, particularly at the pre-college level
- Help create our 21st century scientific and technical workforce

# **OSS Education and Outreach**

## **Excerpts from the Hart-Rudman Report**

### **Education as a National Security Imperative**

The capacity of America's education system to create a 21st century workforce second to none in the world is a national security issue of the first order. As things stand, this country is forfeiting that capacity.....

Education is the foundation of America's future.... Education in science, mathematics, and engineering has special relevance for the future of U.S. national security, for America's ability to lead depends particularly on the depth and breadth of its scientific and technical communities.

The health of the U.S. economy, therefore, will depend not only on professionals who can produce and direct innovation in a few key areas, but also on a populace that can effectively assimilate a wide range of new tools and new technologies.

The American educational system does not appear ready for such challenges...

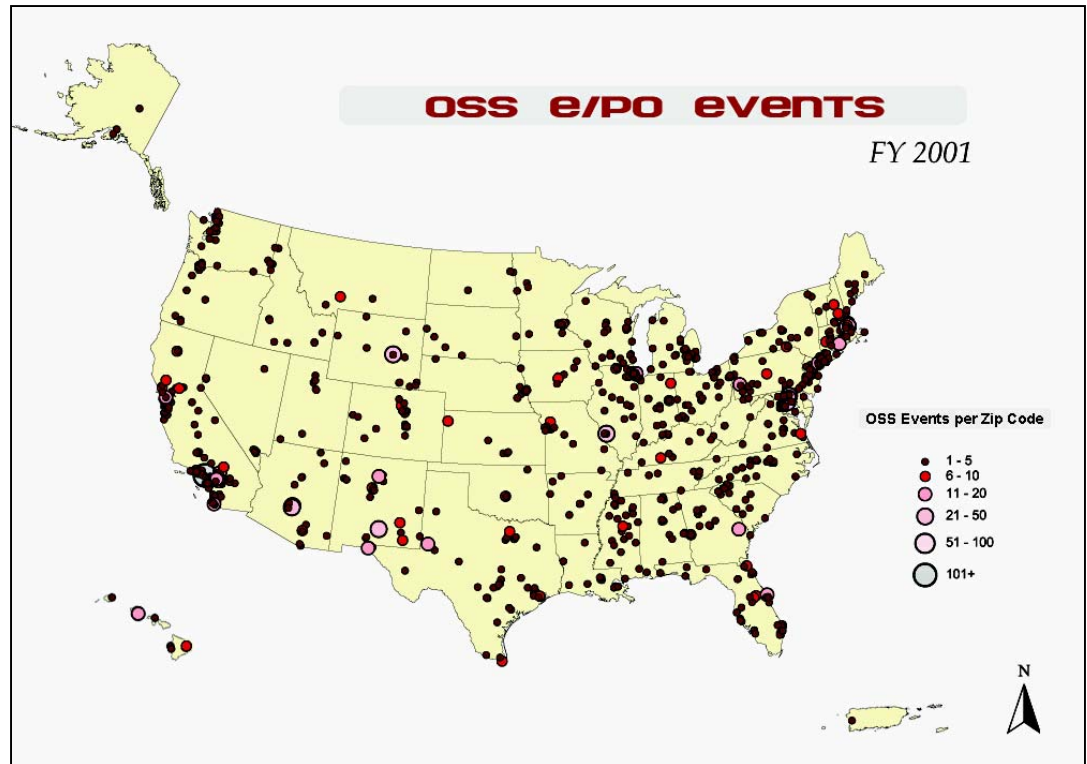
# **OSS Education and Public Outreach**

## **Where Are We Now?**

- OSS is firmly committed to making a substantive contribution to pre-college education and the broad public understanding of science, mathematics, and technology.
- E/PO is an integral part of every mission and research program.
- A major national program of space science education is now underway. For further information see:
  - The OSS FY 2000 E/PO Annual Report (January 2001)
  - The OSS E/PO Newsletters (5 published to date)
  - The OSS E/PO Homepage <http://spacescience.nasa.gov/education>
  - The OSS FY 2001 Annual Report (see OSS E/PO Homepage)

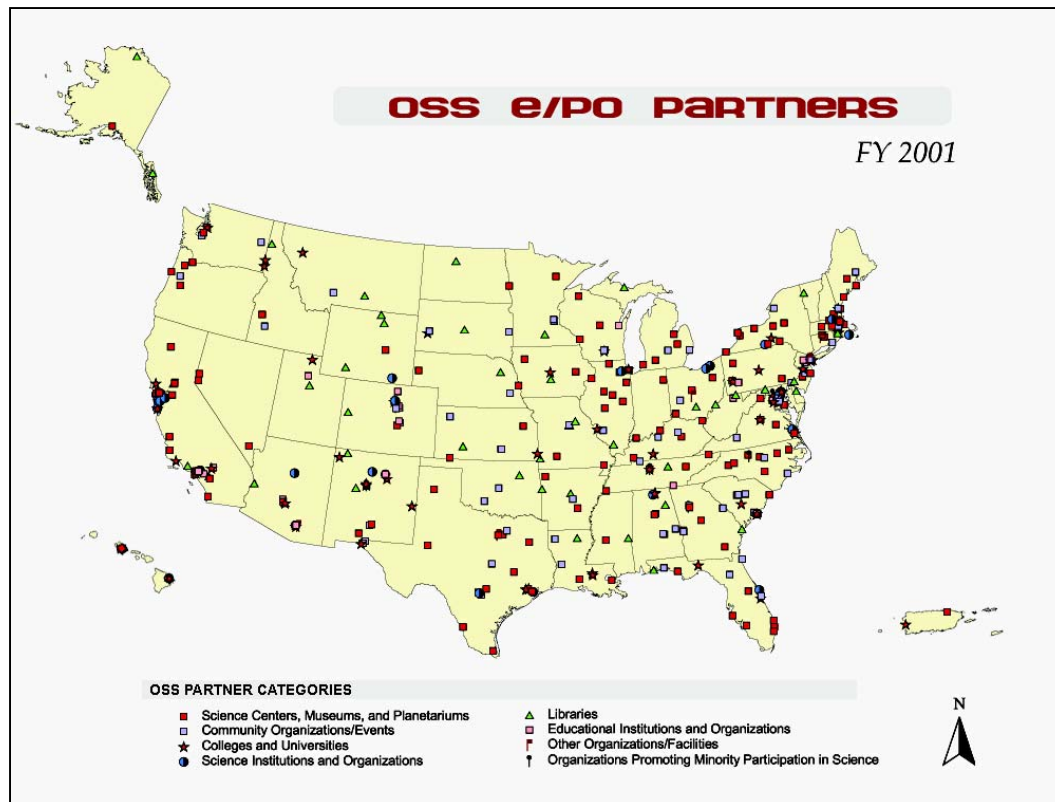
# Extent of FY 2001 OSS E/PO Program

- Over 400 E/PO activities and new products.
- Nearly 3000 discrete E/PO events.
- Presence in all 50 states, DC, PR, and VI.
- Presence at 20 national and 36 regional E/PO conferences.
- More than 50 awards and other forms of public recognition received.
- Estimated participants:
  - Over 200,000 direct participants in workshops, community and school visits, and other interactive special events.
  - Over 50 million Internet participants for web casts, web chats, and other web events.
  - Potential audience of over 200 million for lectures, planetarium shows, museum exhibitions, conference exhibits, radio, television, and other forms of public media.



# Contributors to FY 2001 OSS E/PO Program

- Over 100 OSS Missions and Programs.
- Nearly 900 OSS-affiliated scientists, technologists, and support staff.
- Nearly 500 institutional partners, including:
  - ~ 180 science centers, museums, and planetariums.
  - ~ 40 precollege educational organizations, school districts and boards.



- ~ 130 science institutions and organizations, colleges and universities (including 24 minority institutions).
- 12 professional societies of minority scientists and organizations promoting minority participation in science.
- Over 130 libraries, community and other organizations.

# **OSS Education and Public Outreach**

## **What Are We Looking For In The MIDEX CSRs?**

- A full E/PO proposal giving a credible story containing specifics and commitments/reality (not rhetoric).
  - See Appendix B of Guidelines and Criteria for the Phase A Concept Study
  - A good case can be laid out in 4 pages.
  - Letters of support/commitment from E/PO partners are important.
- A program that is aligned to the OSS E/PO Strategy and E/PO Implementation Plan
  - The content of both these documents is directly reflected in the E/PO Evaluation Criteria contained in Appendix B of the Concept Study Guidelines
- A commitment to adequately fund the proposed E/PO program
  - OSS Guideline: 1-2% of the total mission cost through all phases excluding launch vehicles

**E/PO may play a role in the selection process**

**Evaluation will be done as part of the TMC0 process**

# **OSS Education and Public Outreach**

## **What Should The MIDEX CSRs Discuss?**

- E/PO Objectives, planned activities, implementation plans, evaluation plans, PI and science team members involvement, educational personnel involvement, partnerships and collaborations with education and outreach organizations.
- Organization, management, budget and implementation schedule.
- Plans for developing and disseminating education/outreach products and materials, for contributing to the training of underserved and/or underutilized groups in science and technology, and for coordination of the planned E/PO program with the existing OSS E/PO program.
- Letters of support/commitment from partners and resumes of key E/PO personnel should be included in the appendices to the proposal.



# **How Will We Judge Quality?**

## **General Evaluation Criteria**

The general criteria to be applied to the evaluation of the E/PO component of all MIDEX CSRs are:

- the quality, scope, realism, and appropriateness of the proposed E/PO program, including the general intellectual linkage to the science objectives of the parent research proposal or mission;
- the adequacy, appropriateness, and realism of the proposed budget, including demonstration of effective use of funds;
- the capabilities and commitment of the proposer and the proposer's team to carry out the proposed E/PO program, including the direct involvement of one or more science team members in overseeing and carrying out the proposed E/PO program, as well as the establishment or continuation of effective partnerships with institutions and/or personnel in the fields of education and/or public outreach as the basis for and as an integral element of the proposed E/PO program; and
- the appropriateness of plans for evaluating the effectiveness and impact of the proposed education/outreach activity.

# **How Will We Judge Quality?**

## **Specific Evaluation Criteria**

To ensure that the goals and objectives of the OSS E/PO strategy are realized in practice, proposals will also be evaluated using the following specific criteria as appropriate. The specific E/PO criteria are:

- when dealing directly or strongly affecting the formal education system (e.g. teacher workshops or student programs carried out at public institutions, such as science museums and planetariums), the degree to which the proposed E/PO effort is aligned with and linked to nationally recognized and endorsed education reform efforts and/or efforts at the state or local levels;
- the degree to which the proposed E/PO effort contributes to the training, involvement, and broad understanding of science and technology by underserved and/or underutilized groups; and
- the potential for the proposed E/PO activity to expand its scope by having an impact beyond the direct beneficiaries (e.g., reaching relatively large audiences, being suitable for replication or broad dissemination, and/or drawing on resources beyond those directly requested in the proposal).

## **How Will We Judge Quality?**

### **Mission Criterion**

The mission criterion to be explicitly considered as part of the evaluation is:

- **The general intellectual linkage of the planned E/PO program to any unique scientific or technical aspects of the MIDEX mission.**

Plans for coordination of the proposed activities with other ongoing OSS E/PO efforts will also be explicitly considered in the evaluation process.

# **OSS Education and Public Outreach Sources of Information**

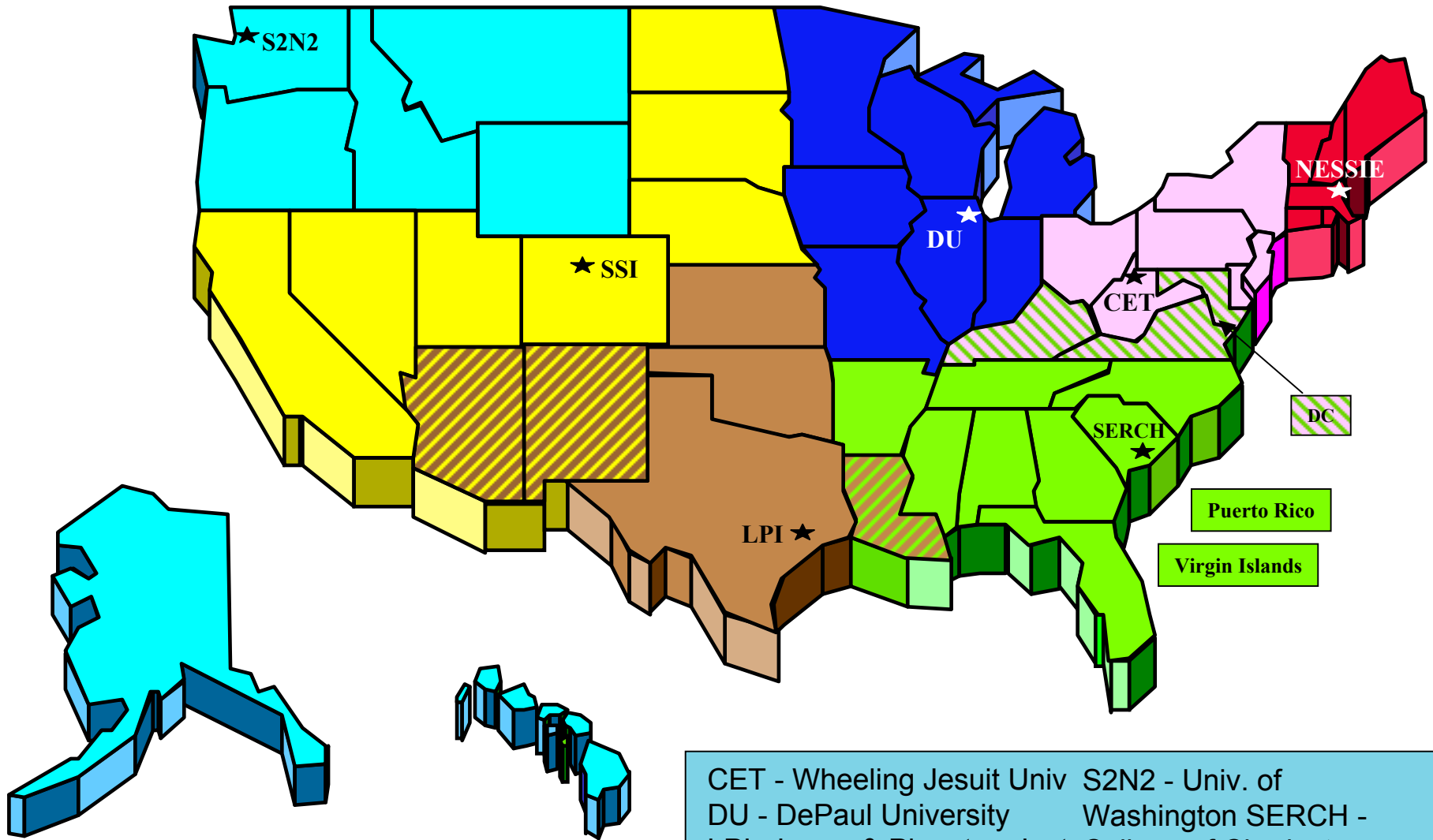
- A Short Reading List:
  - OSS Education and Public Outreach Strategy
  - OSS Education and Public Outreach Implementation Plan
  - OSS Explanatory Guide for the Education/Public Outreach Evaluation Criteria
  - OSS FY 2000/2001 Education and Public Outreach Annual Reports
- The OSS “Explanatory Guide”
  - Describes in more detail what the Evaluation Criteria mean
  - Contains answers to “Frequently Asked Questions”
  - Was developed to ensure that E/PO efforts are prepared and evaluated on a consistent basis
  - “Guide” has been updated (Version 2.0 on-line February 2002)

# **OSS Education and Public Outreach**

## **Sources of Assistance**

- Call your local Broker/Facilitator or the appropriate OSS Education Forum
  - The Support Network is there to help, but is not responsible for preparing the E/PO portion of your Investigation
- In accord with the operating principles developed by the Support Network, discussions with individual Teams developing proposals will be treated as proprietary
- Contact information is available through the OSS E/PO Homepage
- Questions about the OSS E/PO Program may be directed to the Office of Space Science E/PO Program Office.

# FY 2002 OSS E/PO Broker/Facilitator Regions



CET - Wheeling Jesuit Univ    S2N2 - Univ. of  
 DU - DePaul University    Washington  
 LPI - Lunar & Planetary Inst    College of Charleston  
 NESSIE - Museum of Scien    SSI - Space Science Inst.

(cross-hatches indicate shared regions)

# **OSS Education and Public Outreach**

## **Some Summary Observations**

- OSS is serious about education and public outreach
  - A major national program is now underway
- E/PO will be an integral element of the MIDEX evaluation and selection process
  - E/PO has made a difference in some selections
- OSS has seen a significant evolution in the level of maturity, ambition and sophistication in mission E/PO programs over the past several years
  - We have high expectations for MIDEX E/PO.
- Resources are available to help the PI's in developing their proposals
  - Contact the Forums and Broker/Facilitators for help
  - Read the “Explanatory Guide” and other available documentation
- Treat E/PO with the same rigor and professionalism that you treat the science and engineering aspects of your Concept Study Report.